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1648/2

JAN 10 2001

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/581,976

DATE: 01/08/2001 TIME: 18:14:25

TECH CENTER 1600/2900

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\01082001\I581976.raw

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4 <110> APPLICANT: Dalemans, Wilfried L.J.
       Gerard, Catherine Marie Ghislaine
                                                                      ENTERED
 7 <120> TITLE OF INVENTION: Vaccine
10 <130> FILE REFERENCE: B45124
12 <140> CURRENT APPLICATION NUMBER: 09/581,976
13 <141> CUPRENT FILING DATE: 2000-06-20
15 <150> PRIOR APPLICATION NUMBER: PCT/EP98/08563
16 <151> PRIOR FILING DATE: 1998-12-18
18 <150> PRIOR APPLICATION NUMBER: GB 9727262.9
19 <151> PRIOR FILING DATE: 1997-12-24
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23 <170> SOFTWARE: FastSEQ for Windows Version 3.0
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26 <211> LENGTH: 220
27 <212> TYPE: PRT
28 <213> ORGANISM: Artificial Sequence
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31 <223> OTHER INFORMATION: Chimaeric protein (protein D from Haemoplilus
      influenza B and E7 from Human papilloma virus type
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   <400> SEQUENCE: 1
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   Ser Asp Lys Ile Ile Ile Ala His Arg Gly Ala Ser Gly Tyr Leu Pro
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                                   25
                                                       30
40
   Glu His Thr Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp
41
          35
                               40
    Tyr Leu Glu Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val
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                         5.5
44
   Ile His Asp His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe
45
                     70
                                          75
   Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr
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                  85
                                       90
   Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met
48
49
              100
                                  105
                                                      110
50
   Ala Met His Gly Asp Thr Pro Thr Leu His Glu Tyr Met Leu Asp Leu
5.1
        115
                             120
                                                  125
52
   Gln Pro Glu Thr Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn Asp Ser
5.3
                          135
                                             140
54
   Ser Glu Glu Glu Asp Glu Ile Asp Gly Pro Ala Gly Gln Ala Glu Pro
55
                       1.50
                                          1,55
56
    \hbox{Asp Arg Ala His Tyr Asn Ile Val Thr Phe Cys Cys Lys Cys Asp Ser } \\
                                      170
57
                 165
                                                          175
58
   Thr Leu Arg Leu Cys Val Gln Ser Thr His Val Asp Ile Arg Thr Leu
59
             180
                                 1.85
                                                     190
60
   Glu Asp Leu Leu Met Gly Thr Leu Gly Ile Val Cys Pro Ile Cys Ser
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200

205

DATE: 01/08/2001 RAW SEQUENCE LISTING PATENT APPLICATION: US/09/581,976 TIME: 18:14:25 Input Set : A:\seqlist.txt Output Set: N:\CRF3\01082001\I581976.raw 62 Gln Lys Pro Thr Ser Gly His His His His His 63 210 215 65 <210> SEQ ID NO: 2 66 <211> LENGTH: 663 67 <212> TYPE: DNA 68 <213> ORGANISM: Artificial Sequence 70 <220> FEATURE: 71 <223> OTHER INFORMATION: Chimaeric protein (protein D from Haemoplilus influenza B and E7 from Human papilloma virus type 72 73 1.6) 75 <400> SEQUENCE: 2 76 atggatecaa geageeatte ateaaatatg gegaatacee aaatgaaate agacaaaate 77 attattgete accettgetge tageggttat ttaccagage atacettaga atetaaagea 78 cttgcgtttg cacaacaggc tgattattta gagcaagatt tagcaatgac taaggatggt 79 egittagigg tiaticacga teacittita gaiggetiga elgalgitge gaaaaaatte 80 ccacategic atogiaaaqa tygeegitae tatyicateg actitacett aaaagaaatt 81 caaagtttag aaatgacaga aaactttgaa accatggcca tgcatggaga tacacctaca 82 ttgcatgaat atatgttaga tttgcaacca gagacaactg atctctactg ttatgagcaa 83 ttaaatgaca geteagagga ggaggatgaa atagatggte eagetggaca age'agaaceg gacagageed attacaatat tytaacettt tyttgcaagt gtgaetetae gettegytty 85 tgcgtacaaa gcacacacgt agacattcgt actttggaag acctgttaat gggcacacta 86 ggaattgtgt genecatetg tteteagaaa ccaactagtg genaceatea ccateaceat 87 taa 89 <210> SEQ ID NO: 3 90 <21.1> LENGTH: 822 91 <212> TYPE: DNA 92 <213> ORGANISM: Artificial Sequence

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95 <223> OTHER INFORMATION: Chimaeric protein (protein D from Haemoplilus

influenza B and E6 from Human papilloma virus type

JAN 1 0 2001

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180

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360 420

480 540

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663

94 <220> FEATURE:

16)

116 <210> SEQ ID NO: 4 117 <211> LENGTH: 273 118 <212> TYPE: PRT

96

97

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/581,976

DATE: 01/08/2001 TIME: 18:14:25

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\01082001\1581976.raw

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TECH CENTER 1600/2900

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121 <220> FEATURE:
122 <223> OTHER INFORMATION: Chimaeric protein (protein D from Haemoplilus
         influenza B and E6 from Human papilloma virus type
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                                                        1.5
    Ser Asp Lys Ile 11e 11e Ala His Arg Gly Ala Ser Gly Tyr Leu Pro 20 25 30
129
130
    Glu His Thr Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp
131
      35
                             40
132
                                                 45
    Tyr Leu Glu Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val
133
      50 55
135
    Ile His Asp His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe
    65 70
                                       75
136
    Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr
137
138
                85
                                      90
    Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met
139
             100
                                 105
140
                                                   110
    Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu
115 120 125
141
1.42
    Cys Thr Glu Leu Gln Thr Thr Tle His Asp Ile Ile Leu Glu Cys Val
      130 135
144
                                   140
    Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe
145
146
              1.50
                                   1.55
    Arg Asp Leu Cys Ile Val Tyr Arg Asp Gly Asn Pro Tyr Ala Val Cys 165 170 175
1.47
1.48
    Asp Lys Cys Leu Lys Phe Tyr Ser Lys Ile Ser Glu Tyr Arg His Tyr 180 185 190
149
150
151
    Cys Tyr Ser Leu Tyr Gly Thr Thr Leu Glu Gln Gln Tyr Asn Lys Pro
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         195
   Leu Cys Asp Leu Leu Ile Arg Cys Ile Asn Cys Gln Lys Pro Leu Cys 210 215 220
153
154
155
    Pro Glu Glu Lys Gln Arg His Leu Asp Lys Lys Gln Arg Phe His Asn
                     230
                                         235
    Ile Arg Gly Arg Trp Thr Gly Arg Cys Met Ser Cys Cys Arg Ser Ser
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         influenza B and E6E7 fusion from Human papilloma
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         virus type 16)
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DATE: 01/08/2001 TIME: 18:14:25 RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/581,976

Input Set : A:\seqlist.txt
Output Set: N:\CRF3\01082001\I581976.raw

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177											_			-		-		-
Coglitaging Latitaging Latitaging Cocacity Cocacatogic Cocac																		
Cacacatogic atogiaaaga tggccgttac tatgicatcg actitacett aaaagaaatt 300		_																
180		cytttagtgy ttattcacga teacttitta gatgycttga ctgatgttgc gaaaaaattc																
181				-							•						•	
182							-					-	••				3.	-
183	181	cgae	ccca	gaa a	agtta	accad	ca g	tt.at	gcaca	a ga	gctg	caaa	caad	otata	aca	tgata	at.aat	a 420
Basil	182	ttag	gaate	gtg 1	tytad	etgea	na go	caac	agtta	a ct	gega	cgtg	aggt	cata	tga	cttt	jcttt	t 480
185	183	cggg	jatti	tat 🤈	geata	agtat	ia ta	agaga	atggg	g aa	tecai	tatg	otgi	tatgi	tga	taaat	ig tit t	a 540
Associate decelor of the property of the pro	184	aagt	ittta	att o	ctaaa	aatta	ag to	gagta	ataga	a ca	ttati	tgtt	atag	gttt	gta	Eggaa	caac	a 600
### ### ##############################	185	ttac	jaaca	age a	aatad	caaca	aa a	ccat	tatat	t ga	tttg	ttaa	ttac	gtg	tat	taact	gtca	a 660
Rate	186	aago	cact	tgt (tect	tgaac	ja a	aagc	aaaga	a ca	tetge	gaca	aaaa	agca	aag	atte	ataa	t 720
Ref	1.87			-			-		-					-				
189								-				-	•					
90 gaatagatg gtccagctg acaagcagaa ccggacagag cccattacaa tattgtaacc 960 191 ttttgttgca agtgtgactc tacgcttcgg ttgtgcgtac aaagcacaca cgtagacatt 1020 192 cgtactttgg aagacctgtt aatgggcaca ctaggaattg tgtgccccat ctgttctcag 1080 193 aaaccaacta gtggccacca tcaccatcac cattaa 1116 195 <210> SEO ID NO: 6 196 <211> LENGTH: 371 197 <212> TYPE: PRT 198 <213> ORGANISM: Artificial Sequence 200 <220> FEATURE: 201 <223> OTHER INFORMATION: Chimaeric protein (protein D from Haemoplilus influenza B and EGE7 fusion from Human papilloma virus type 16) 205 <400> SEQUENCE: 6 206 Met Asp Pro Ser Ser His Ser Ser Asn Het Ala Asn Thr Gln Met Lys 207 1 5 10 15 208 Ser Asp Lys IIe IIe IIe Ala His Arg Gly Ala Ser Gly Tyr Leu Pro 209 20 25 210 Glu His Thr Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp 211 35 40 45 212 Tyr Leu Gln Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val. 213 50 55 60 214 IIe His Asp His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe 215 65 70 75 80 216 Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val IIe Asp Phe Thr 217 85 90 95 218 Leu Lys Glu IIe Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219 100 100 105 110 220 Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu 221 115 120 120 222 Cys Thr Glu Leu Gln Thr Thr IIe His Asp IIe IIe Leu Gln Cys Val 231 130 135 140 125 242 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe		*		-				-			-	-			_	-	-	
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202																		
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206 Met Asp Pro Ser Ser His Ser Ser Asn Het Ala Asn Thr Gln Met Lys 207 1.	202	<223	in	fluei	ıza I	a and										om Ha	emop	lilus
207	202 203		in: vi:	flue: rus	ıza I type	3 and 16)										om Ha	aemop	lilus
208	202 203 205	<400>	in: vi: SE(flue: rus t QUENC	iza I type CE: (3 and 16) 5	d E61	E7 fi	usion	n fr	om Hi	uman	pap:	i.l.lor	na			lilus
209	202 203 205 206	<400 Met	in: vi: SE(flue: rus t QUENC	iza I type CE: (3 and 16) 5 Ser	d E61	E7 fi	usion	n fr	om Hi Het	uman	pap:	i.l.lor	na	Met.		lilus
210 Glu His Thr Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp 211 35 40 45 212 Tyr Leu Glu Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val. 213 50 55 60 214 Ile His Asp His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe 215 65 70 70 80 216 Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr 217 85 90 95 218 Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219 100 105 110 220 Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu 221 115 120 125 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Gln Cys Val. 223 130 135 135 140 224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe	202 203 205 206 207	<400 Met 1	in: vi: > SE(Asp	fluer rus t QUENC Pro	iza I type CE: (Ser	3 and 16) 5 Ser 5	d E61	E7 f	usion Ser	n fro	om Hi Het 10	uman Ala	pap:	illo Thr	na Gln	Met 15	Lys	lilus
211	202 203 205 206 207 208	<400 Met 1	in: vi: > SE(Asp	fluer rus t QUENC Pro	iza I type CE: 6 Ser	3 and 16) 5 Ser 5	d E61	E7 f	usion Ser	Asn Arg	om Hi Het 10	uman Ala	pap:	illo Thr	na Gln Tyr	Met 15	Lys	lilus
Tyr Leu Glu Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val. 213 50 55 60 60 214 1le His Asp His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe 215 65 70 75 80 216 Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr 217 85 90 95 218 Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219 100 105 110 220 Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu 221 115 120 125 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val. 223 130 135 140 6	202 203 205 206 207 208 209	<400 Met 1 Ser	in: vii > SE(Asp	fluer rus (QUENC Pro Lys	iza I type CE: (Ser Ile 20	3 and 16) 5 Ser 5 Ile	His	Ser Ala	sion Ser His	Asn Arg 25	Met 10 Gly	uman Ala Ala	pap: Asn Ser	illo Thr Gly	Gln Tyr 30	Met 15 Leu	Lys Pro	lilus
213	202 203 205 206 207 208 209 210	<400 Met 1 Ser	in: vii > SE(Asp	fluer rus t QUENC Pro Lys	iza I type CE: (Ser Ile 20	3 and 16) 5 Ser 5 Ile	His	Ser Ala	sion Ser His Ala	Asn Arg 25	Met 10 Gly	uman Ala Ala	pap: Asn Ser	Thr Gly Gln	Gln Tyr 30	Met 15 Leu	Lys Pro	lilus
The His Asp His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe 215 65 70 70 75 75 80 80 80 80 85 85 85 8	202 203 205 206 207 208 209 210 211	<400% Met l Ser Glu	in: vi: SE(Asp Asp	fluer rus t QUENC Pro Lys Thr 35	iza I type CE: (Ser Ile 20 Leu	3 and 16) 5 Ser 5 Ile	His Ile Ser	Ser Ala Lys	ser His Ala	Asn Arg 25 Leu	Met 10 Gly	Ala Ala Ala	pap: Asn Ser Ala	Thr Gly Gln 45	Gln Tyr 30 Gln	Met 15 Leu Ala	Lys Pro Asp	lilus
215 65 70 70 75 80 216 Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val Tle Asp Phe Thr 217 85 90 95 218 Leu Lys Glu Tle Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219 100 100 105 110 220 Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu 221 115 120 125 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val 223 130 135 140 224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 211 212	<400% Met l Ser Glu	in: vi: SE(Asp Asp	fluer rus t QUENC Pro Lys Thr 35	iza I type CE: (Ser Ile 20 Leu	3 and 16) 5 Ser 5 Ile	His Ile Ser	Ser Ala Lys	ser His Ala	Asn Arg 25 Leu	Met 10 Gly	Ala Ala Ala	pap: Asn Ser Ala	Thr Gly Gln 45	Gln Tyr 30 Gln	Met 15 Leu Ala	Lys Pro Asp	lilus
216 Pro His Arg His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr 217 90 95 95 218 Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219 100 105 105 110 220 Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu 221 115 120 125 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val 223 130 135 140 140 140 140 140 140 140 14	202 203 205 206 207 208 209 210 211 212	<400% Met l Ser Glu	in: vii SEQ Asp Asp His	fluer rus t QUENC Pro Lys Thr 35	iza I type CE: (Ser Ile 20 Leu	3 and 16) 5 Ser 5 Ile	His Ile Ser	Ser Ala Lys	ser His Ala	Asn Arg 25 Leu	Met 10 Gly	Ala Ala Ala	Asn Ser Ala	Thr Gly Gln 45	Gln Tyr 30 Gln	Met 15 Leu Ala	Lys Pro Asp	lilus
217 85 90 95 95 218 Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219 100 105 110 220 Ala Met Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys Leu Pro Gln Leu 221 115 120 125 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val 223 130 135 140 140 140 140 140 140 140 140 140 140	202 203 205 206 207 208 209 210 211 212 213	<4000 Met 1 Ser Glu	in: vii SEQ Asp Asp His Leu 50	Fluer rus (QUENC Pro Lys Thr 35 Glu	type CE: (Ser Ile 20 Leu	3 and 16) 5 Ser 5 Ile Glu	His Ile Ser Leu	Ser Ala Lys Ala 55	Ser His Ala 40 Met	Asn Arg 25 Leu Th.r	Met 10 Gly Ala	Ala Ala Phe Asp	Asn Ser Ala Gly 60	Thr Gly Gln 45 Arg	GIn Tyr 30 Gin Leu	Met 15 Leu Ala Val	Lys Pro Asp Val	lilus
218 Leu Lys Glu Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Met 219	202 203 205 206 207 208 209 210 211 212 213 214	<400% Met l ser Glu Tyr	in: vii SEQ Asp Asp His Leu 50	Fluer rus (QUENC Pro Lys Thr 35 Glu	type CE: (Ser Ile 20 Leu	3 and 16) 5 Ser 5 Ile Glu	His Ile Ser Leu	Ser Ala Lys Ala 55	Ser His Ala 40 Met	Asn Arg 25 Leu Th.r	Met 10 Gly Ala	Ala Ala Phe Asp	Asn Ser Ala Gly 60	Thr Gly Gln 45 Arg	GIn Tyr 30 Gin Leu	Met 15 Leu Ala Val	Lys Pro Asp Val	lilus
219	202 203 205 206 207 208 209 210 21i 212 213 214 215	<400% Met l Ser Glu Tyr Ile 65	in: vill SEQ Asp Asp His Leu 50	Fluer rus f QUENC Pro Lys Thr 35 Glu	type CE: (Ser Ile 20 Leu Gln	3 and 16) 5 Ser 5 Ile Glu Asp	His Ile Ser Leu Leu 70	Ser Ala Lys Ala 55 Asp	Ser His Ala 40 Met Gly	Asn Arg 25 Leu Thr	Met 10 Gly Ala Lys	Ala Ala Phe Asp Asp 75	Asn Ser Ala Gly 60 Val	Thr Gly Gln 45 Arg	GIn Tyr 30 GIn Leu Lys	Met 15 Leu Ala Val	Lys Pro Asp Val. Phe 80	lilus
220 Ala Met Phe Gin Asp Pro Gin Glu Arg Pro Arg Lys Leu Pro Gin Leu 221 115 120 125 222 Cys Thr Glu Leu Gin Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val. 223 130 135 140 . 224 Tyr Cys Lys Gin Gin Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 211 212 213 214 215 216	<400% Met l Ser Glu Tyr Ile 65	in: vill SEQ Asp Asp His Leu 50	Fluer rus f QUENC Pro Lys Thr 35 Glu	type CE: (Ser Ile 20 Leu Gln	3 and 16) Ser 5 Ile Glu Asp Phe	His Ile Ser Leu Leu 70	Ser Ala Lys Ala 55 Asp	Ser His Ala 40 Met Gly	Asn Arg 25 Leu Thr	Met 10 Gly Ala Lys Thr	Ala Ala Phe Asp Asp 75	Asn Ser Ala Gly 60 Val	Thr Gly Gln 45 Arg	GIn Tyr 30 GIn Leu Lys	Met 15 Leu Ala Val Lys	Lys Pro Asp Val. Phe 80	lilus
221 1.15 1.20 1.25 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val. 223 130 1.35 1.40 224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val. Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 211 212 213 214 215 216 217	<4000 Met 1 Ser Glu Tyr Ile 65 Pro	in: vii: SE(Asp Asp His Leu 50 His	fluer rus f QUENC Pro Lys Thr 35 Glu Asp	type CE: (Ser Ile 20 Leu Gln His	3 and 16) 5 Ser 5 Ile Glu Asp Phe Arg 85	His Ile Ser Leu Leu 70 Lys	Ser Ala Lys Ala 55 Asp	Ser His Ala 40 Met Gly Gly	Asn Arg 25 Leu Thr Leu Arg	Met 10 Gly Ala Lys Thr	Ala Ala Phe Asp Asp 75 Tyr	Asn Ser Ala Gly 60 Val	Thr Gly Gln 45 Arg Ala	GIn Tyr 30 Gin Leu Lys	Met. 15 Leu Ala Val Lys Phe 95	Lys Pro Asp Val. Phe 80 Thr	lilus
221 1.15 1.20 1.25 222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val. 223 130 1.35 1.40 224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val. Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 21.1 212 2.1.3 214 215 216 217 218	<4000 Met 1 Ser Glu Tyr Ile 65 Pro	in: vii: SE(Asp Asp His Leu 50 His	fluer rus f QUENC Pro Lys Thr 35 Glu Asp	type CE: (Ser Ile 20 Leu Gln His	3 and 16) 5 Ser 5 Ile Glu Asp Phe Arg 85	His Ile Ser Leu Leu 70 Lys	Ser Ala Lys Ala 55 Asp	Ser His Ala 40 Met Gly Gly	Asn Arg 25 Leu Th.r Leu Arg	Met 10 Gly Ala Lys Thr	Ala Ala Phe Asp Asp 75 Tyr	Asn Ser Ala Gly 60 Val	Thr Gly Gln 45 Arg Ala	GIn Tyr 30 Gin Leu Lys Asp	Met. 15 Leu Ala Val Lys Phe 95	Lys Pro Asp Val. Phe 80 Thr	lilus
222 Cys Thr Glu Leu Gln Thr Thr Ile His Asp Ile Ile Leu Glu Cys Val 223 130 135 140 . 224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 211 212 213 214 215 216 217 218	<4000 Met 1 Ser Glu Tyr Ile 65 Pro	in: viii SE(Asp Asp His Leu 50 His His	Fluer rus f QUENC Pro Lys Thr 35 Glu Asp Arg	Iza I type CE: (Ser Ile 20 Leu Gln His His	3 and 16) Ser 5 Ile Glu Asp Phe Arg 85 Gln	His Ile Ser Leu To Lys Ser	Ser Ala Lys Ala 55 Asp Asp	Ser His Ala 40 Met Gly Gly Glu	Asn Arg 25 Leu Th.r Leu Arg Met 105	Met 10 Gly Ala Lys Thr Tyr 90 Thr	Ala Ala Phe Asp Asp 75 Tyr Glu	Asn Ser Ala Gly 60 Val Val	Thr Gly Gln 45 Arg Ala Ile	Tyr 30 Gln Leu Lys Asp	Met 1.5 Leu Ala Val Lys Phe 95 Thr	Lys Pro Asp Val Phe 80 Thr	lilus
223 130 135 140 224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220	<4000 Met 1 Ser Glu Tyr Ile 65 Pro	in: viii SE(Asp Asp His Leu 50 His His	Fluer rus f QUENC Pro Lys Thr 35 Glu Asp Arg Glu	Iza I type CE: (Ser Ile 20 Leu Gln His His	3 and 16) Ser 5 Ile Glu Asp Phe Arg 85 Gln	His Ile Ser Leu To Lys Ser	Ser Ala Lys Ala 55 Asp Asp	Ser His Ala 40 Met Gly Gly Glu Glu	Asn Arg 25 Leu Th.r Leu Arg Met 105	Met 10 Gly Ala Lys Thr Tyr 90 Thr	Ala Ala Phe Asp Asp 75 Tyr Glu	Asn Ser Ala Gly 60 Val Val	Thr Gly Gln 45 Arg Ala Ile Phe Leu	Tyr 30 Gln Leu Lys Asp	Met 1.5 Leu Ala Val Lys Phe 95 Thr	Lys Pro Asp Val Phe 80 Thr	lilus
224 Tyr Cys Lys Gln Gln Leu Leu Arg Arg Glu Val Tyr Asp Phe Ala Phe	202 203 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221	<400% Net 1 Ser Glu Tyr Ile 65 Pro Leu Ala	in: vi.x SE(Asp Asp Asp His Leu 50 His Lys Met	Fluerus G QUENO Pro Lys Thr 35 Glu Asp Arg Glu Phe 115	nza IIa type CE: (Ser IIa 20 Leu Gln His Ile 100 Gln	3 and 16) 5 Ser 5 Ile Glu Asp Phe Arg 85 Gln	His Ile Ser Leu TO Lys Ser Pro	Ser Ala Lys Ala 55 Asp Asp Leu Gln	Ser His Ala 40 Met Gly Glu Glu 120	Asn Arg 25 Leu Thr Leu Arg Met 105 Arg	Met 10 Gly Ala Lys Thr Tyr 90 Thr	Ala Ala Phe Asp 75 Tyr Glu Arg	Asn Ser Ala Gly 60 Val Val Asn	Thr Gly Gln 45 Arg Ala Tle Phe Leu 125	Gln Tyr 30 Gln Leu Lys Asp Glu 110 Pro	Met 15 Leu Ala Val Lys Phe 95 Thr	Lys Pro Asp Val Phe 80 Thr Met Leu	lilus
	202 203 205 206 207 208 209 210 21.i 212 2.3 214 21.5 216 217 218 219 220 221	<400% Net 1 Ser Glu Tyr Ile 65 Pro Leu Ala	in: vii. SE(Asp Asp Asp His Leu 50 His Lys Met Thr	Fluerus G QUENO Pro Lys Thr 35 Glu Asp Arg Glu Phe 115	nza IIa type CE: (Ser IIa 20 Leu Gln His Ile 100 Gln	3 and 16) 5 Ser 5 Ile Glu Asp Phe Arg 85 Gln	His Ile Ser Leu TO Lys Ser Pro	Ser Ala Lys Ala S5 Asp Asp Leu Gln Thr	Ser His Ala 40 Met Gly Glu Glu 120	Asn Arg 25 Leu Thr Leu Arg Met 105 Arg	Met 10 Gly Ala Lys Thr Tyr 90 Thr	Ala Ala Phe Asp 75 Tyr Glu Arg	Asn Ser Ala Gly 60 Val Val Lys Ile	Thr Gly Gln 45 Arg Ala Ile Phe Leu 125 Leu	Gln Tyr 30 Gln Leu Lys Asp Glu 110 Pro	Met 15 Leu Ala Val Lys Phe 95 Thr	Lys Pro Asp Val Phe 80 Thr Met Leu	lilus
250 2.0	202 203 205 206 207 210 211 212 213 214 215 216 217 218 219 220 221 222 223	<4000 Met l Ser Glu Tyr Ile 65 Pro Leu Ala Cys	in: vi.Asp Asp Asp His Leu 50 His Lys Met. Thr 130	Fluerrus (QUENC Pro Lys Thr 35 Glu Asp Arg Glu Phe 115 Glu	nza I a type CE: (Ser Ile 20 Leu Gln His Ile 100 Gln Leu	33 and 16) 5 Ser 5 Ile Glu Asp Phe Arg 85 Gln Asp	His ser Leu Leu 70 Lys Ser Pro	Ser Ala Lys Ala 55 Asp Leu Gla Thr 135	Ser His Ala 40 Met Gly Glu Glu 120 Ile	Asn Arg 25 Leu Thr Leu Arg Met 105 Arg	Met 10 Gly Ala Lys Thr Tyr 90 Thr Pro Asp	Ala Ala Ala Phe Asp 75 Tyr Glu Arg	Asn Ser Ala Gly 60 Val Val Asn Lys Ile 140	Thr Gly Gln 45 Arg Ala Ile Phe Leu 125 Leu	Gln Tyr 30 Gln Leu Lys Asp Glu 110 Pro	Met 15 Leu Ala Val Lys Phe 95 Thr Gln	Lys Pro Asp Val. Phe 80 Thr Met Leu Val.	lilus
	2022 2033 2055 2066 2077 2112 2122 2133 2144 2155 2166 2177 2188 2199 2200 2212 2212 2223 2244	<4000 Met 1 Ser Glu Tyr Ile 65 Pro Leu Ala Cys	in: vi.Asp Asp Asp His Leu 50 His Lys Met. Thr 130	Fluerrus (QUENC Pro Lys Thr 35 Glu Asp Arg Glu Phe 115 Glu	nza I a type CE: (Ser Ile 20 Leu Gln His Ile 100 Gln Leu	33 and 16) 5 Ser 5 Ile Glu Asp Phe Arg 85 Gln Asp	His Ser Leu 70 Lys Ser Pro Thr Leu	Ser Ala Lys Ala 55 Asp Leu Gla Thr 135	Ser His Ala 40 Met Gly Glu Glu 120 Ile	Asn Arg 25 Leu Thr Leu Arg Met 105 Arg	Met 10 Gly Ala Lys Thr Tyr 90 Thr Pro Asp	Ala Ala Ala Phe Asp 75 Tyr Glu Arg Ile Val	Asn Ser Ala Gly 60 Val Val Asn Lys Ile 140	Thr Gly Gln 45 Arg Ala Ile Phe Leu 125 Leu	Gln Tyr 30 Gln Leu Lys Asp Glu 110 Pro	Met 15 Leu Ala Val Lys Phe 95 Thr Gln	Lys Pro Asp Val. Phe 80 Thr Met Leu Val.	lilus

1

RAW SEQUENCE LISTING PATENT APPLICATION: US/09/581,976

DATE: 01/08/2001 TIME: 18:14:25

Input Set : A:\seqlist.txt
Output Set: N:\CRF3\01082001\1581976.raw

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227 228	Asn	Lve	Cus	Leu	1.65	Phe	ጥቁኮ	Ser	Luc	170	Ser	Glu	Tvr	Δεσ	175 His	Tur	
229	пор	270	0,10	180	21,0		. ,	00.	185		50.1	010	- 7 -	190		-1-	
230	Cys	Tyr	Ser	Leu	Tyr	\mathtt{Gl}_{Y}^{ω}	Thr	${\rm Th} x$	Leu	Glu	Gln	Gln	Tyr	Asn	Lys	Pro	
231			1.95					200					205				
232 233	Leu		Asp	Leu	Leu	He	••	Cys	Tle	Asn	Cys		Lys	Pro	Leu	Cys	
233	pro	21.0 Glu	clo.	Lys	Gln	Arm	215 Hie	E.G.II	Δen	f.ve	1.00	220 Gln	Δra	Dho	Hic	Δen	
235	225	01.0	OIU	157.5	0111	230	1113	neu	мэр	Llys	235	OIII	ur a	inc	ıi T.O	240	
236	rle	Arg	Gly	Arg	Trp	Thr	Gly	Arg	Cys	Met	Ser	Суѕ	Cys	Arg	Ser	Ser	
237					245					250					255		
238	Arg	Thr	Arg	Arg	Glu	Thr	Gln	Leu		His	Gly	Asp	Thr		Thr	Leu	
239			_	260			_		265				_	270			
240 241	His	Glu	Tyr 275	мет	Leu	Asp	Leu	280	Pro	Glu	Thr	Thr	285	Leu	Tyr	Cys	
241	Titate	G1n		Leu	Agn	Asn	Ser		Glu	Clu	Glo	Agn		Tle	Aen	Glv	
243	.,.	290	01.11	110,11		1100	295		0.10	OIG	01.4	300	o u		тор	CI I J	
244	Pro	Ala	Gly	Gln	Ala	Glu	Pro	Asp	Arg	Ala	His	Tyr	Asn	Ile	Va.l	Thr	
245	305		-			310			-		315					320	
246	Phe	Cys	Cys	Lys	Cys	Asp	Ser	Thr	Leu	Arg	Leu	Cys	Val	Gln	ser	Thr	
247					325					330					335		
248	His	Va 1.	Asp	Lle	Arg	Thr	Leu	Glu	•	Leu	Leu	Met	Gly		Leu	Gly	
249	77.	U a l	C	340	T 1	C++0	0	<i>a</i> 1 -	345	Dane	mb		C1	350	111.0	n i a	
$\frac{250}{251}$	1. L e	vaı	355	Pro	TIE	Cys	ser	360	гЛР	PIO	.1 11 3.	ser	365	nis	n.L.S	nis	
252	His	His						300					303				
253		370															
255	<21.0		OI	NO:	7												
256	<21.13	> LEN	IGTH	: 663	3												
257	<21.23	> TYI	E: I	ONA													
	<21.33				\rt.i.f	icia	al se	ednei	ıce								
	<220													_ ~			
261	<223								-						om iia	emoplilu	S
263				ıza E Lype		ı unus u	.a i.ec	1 12.7	1.1.01	a mun	nan (Sabri	L.I.OIRe	1			
	<400:																
266		-	-			c at	caaa	itato	qee	raat.a	accc	aaat	.gaaa	ite a	igaca	aaatc	60
267															-	aagca	120
268	otte	gegti	itg d	cacaa	cage	ic to	jatta	ittta	gaç	caaç	att	tago	caate	jac 1	aagg	gatggt	1.80
269	cgti	:tagt	:gg t	:tatt	cacç	ja to	cactt	:ttta	gat	:ggct	:tga	ctga	itgt	ige g	gaaaa	iaatto	240
270		-	•	-	-						-				-	gaaatt	300
271								_						-		cctaca	360
272	-	-					**				-					cagcaa	420
273 274								**								gaaccg eggttg	480 540
275									-			-				icacta	600
276			-			-		-					-			accat	660
277	taa		-J- :	, ,		,		,				.,			, , , , , , , , , , , , , , , , , , , ,		663

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/581,976

DATE: 01/08/2001 TIME: 18:14:26

Input Set : A:\seqlist.txt
Output Set: N:\CRF3\01082001\I581976.raw

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